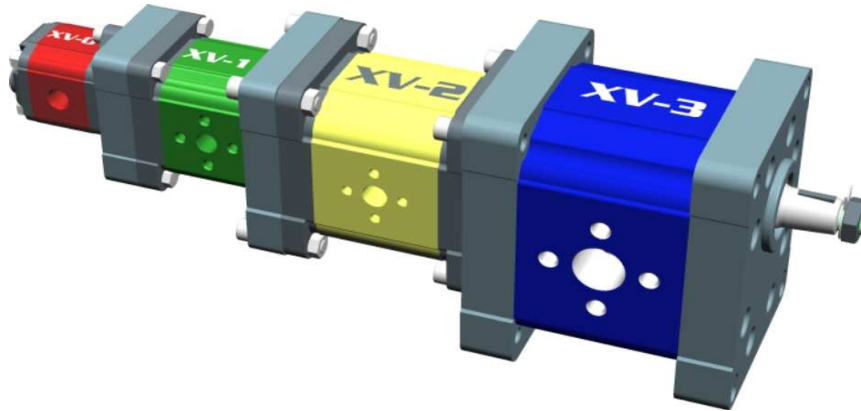


# VIVOIL



ENGLISH

## Unidirectional Pumps



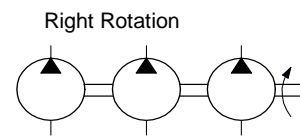
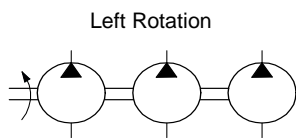
<b>XV-0P</b>	<b>Unidirectional Pump</b>	
<b>XV-1P</b>	Left Rotation	Right Rotation
<b>XV-2P</b>		
<b>XV-3P</b>		

<b>XV-0U</b>	<b>Unidirectional Motor</b>	
<b>XV-1U</b>	Left Rotation	Right Rotation
<b>XV-2U</b>		
<b>XV-3U</b>		

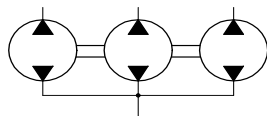
<b>XV-0R</b>	<b>Reversible Pump</b>	
<b>XV-1R</b>	External drainage	Internal drainage
<b>XV-2R</b>		
<b>XV-3R</b>		

<b>XV-0M</b>	<b>Reversible Motor</b>	
<b>XV-1M</b>	External drainage	Internal drainage
<b>XV-2M</b>		
<b>XV-3M</b>		

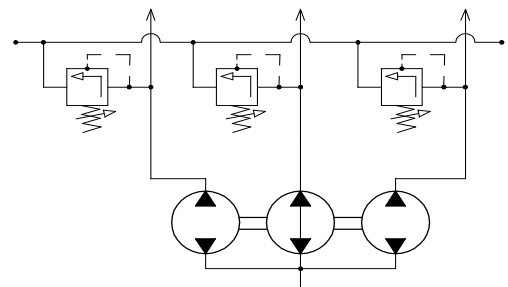
<b>XV-0T</b>	<b>XV-1T</b>	<b>XV-2T</b>	<b>XV-3T</b>	<b>Primary element of multiple pump</b>
<b>XV-0I</b>	<b>XV-1I</b>	<b>XV-2I</b>	<b>XV-3I</b>	<b>Intermediate element of multiple pump</b>
<b>XV-0F</b>	<b>XV-1F</b>	<b>XV-2F</b>	<b>XV-3F</b>	<b>Final element of multiple pump</b>



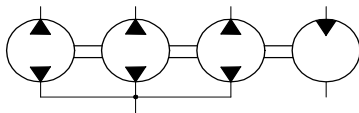
<b>KV-DF</b>	<b>Flow divider</b>
--------------	---------------------



<b>KV-DFV</b>	<b>Flow divided with valves</b>
---------------	---------------------------------



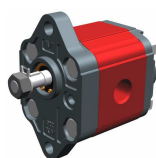
<b>KV-DF+M</b>	<b>Flow divider with motor</b>
----------------	--------------------------------



The descriptions and dimensions stated herein are not binding. Vivoil Oleodinamica Vivolo s.r.l reserves the right to make changes as it deems necessary, at any time and without notice.

Introduction	7
Summary: Displacements - Pressures - Speeds	9
General technical data	10
Torques allowed on shaft	12
Useful calculation formulas	13
Characteristic Curves	14
Changing the direction of pump rotation - group 0	18
Changing the direction of pump rotation - group 1	19
Changing the direction of pump rotation - group 2	23
Changing the direction of pump rotation - group 3	28

**XV-0P**



XP001

STANDARD PUMP

ø22 FLANGE - PARALLEL SHAFT

30

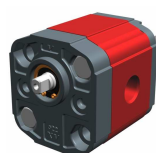


XP012

BH TYPE PUMP

ø22 BODY-SHAPED FLANGE - MILLED SHANK

32



XP017

HY TYPE PUMP

ø22 BODY-SHAPED FLANGE - MILLED SHANK

34

**XV-1P**

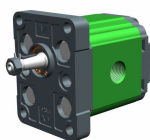


XP101

STANDARD EUROPEAN PUMP

ø25.4 FLANGE - TAPER SHAFT

36

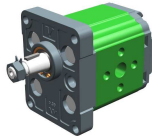


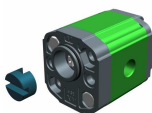

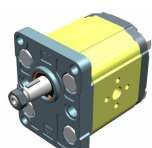
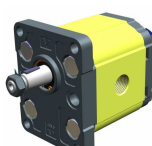
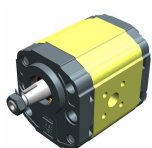
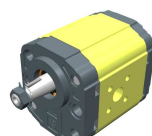


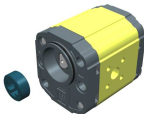
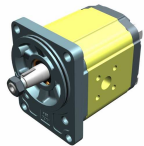
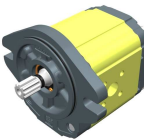
XP105

STANDARD EUROPEAN PUMP

ø25.4 FLANGE - TAPER SHAFT

38

	XP113	STANDARD PUMP ø30 FLANGE - TAPER SHAFT	40
<hr/>			
	XP119	"BH" TYPE PUMP ø32 BODY-SHAPED FLANGE - MILLED SHANK	42
<hr/>			
	XP140	"HY" TYPE PUMP ø32 BODY-SHAPED FLANGE - MILLED SHANK	44
<hr/>			
	XP161	STANDARD GERMAN "BH" TYPE PUMP ø32 BODY-SHAPED FLANGE - MILLED SHANK	46
<hr/>			
	XP168	"SAE AA" TYPE PUMP ø50.8 FLANGE - PARALLEL SHAFT	48
<hr/>			
			<b>XV-2P</b>
	XP201	STANDARD EUROPEAN PUMP ø36.5 FLANGE - TAPER SHAFT	50
<hr/>			
	XP207	STANDARD EUROPEAN PUMP ø36.5 FLANGE - TAPER SHAFT	52
<hr/>			
	XP210	"BH" TYPE PUMP ø50 BODY-SHAPED FLANGE - TAPER SHAFT	54
<hr/>			
	XP213	"HY" TYPE PUMP ø50 BODY-SHAPED FLANGE - TAPER SHAFT	56
<hr/>			

	<b>XP216</b>	<b>STANDARD GERMAN "BH" TYPE PUMP</b> <b>ø52 BODY-SHAPED FLANGE - MILLED SHANK</b>	<b>58</b>
	<b>XP217</b>	<b>STANDARD GERMAN PUMP</b> <b>ø80 FLANGE - TAPER SHAFT</b>	<b>60</b>
	<b>XP219</b>	<b>"SAE A" TYPE PUMP</b> <b>ø82.5 FLANGE - SPLINED SHAFT</b>	<b>62</b>

**XV-3P**

	<b>XP301</b>	<b>STANDARD EUROPEAN PUMP</b> <b>ø50.8 FLANGE - TAPER SHAFT</b>	<b>64</b>
	<b>XP302</b>	<b>STANDARD EUROPEAN PUMP</b> <b>ø50.8 FLANGE - TAPER SHAFT</b>	<b>66</b>
	<b>XP331</b>	<b>SAE B TYPE PUMP</b> <b>ø101.6 FLANGE - SPLINED SHAFT</b>	<b>68</b>
	<b>XP332</b>	<b>SAE B TYPE PUMP</b> <b>ø101.6 FLANGE - SPLINED SHAFT</b>	<b>70</b>

<b>APPENDIX - Special Versions</b>	<b>72</b>
<b>Max. Pressure Valves</b>	<b>74</b>
<b>Unions</b>	<b>75</b>
<b>Table of seals OR</b>	<b>77</b>
<b>Table of oil speeds</b>	<b>78</b>
<b>Table of Areas and Perimeters</b>	<b>79</b>

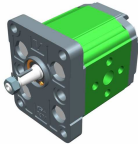
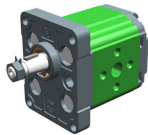



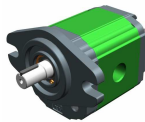


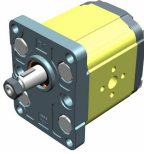

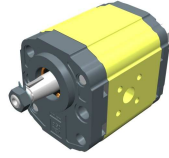
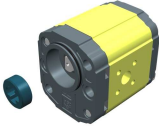
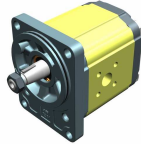
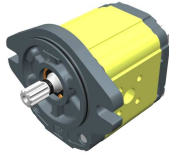
## UNIDIRECTIONAL PUMPS

### Index

Pressure conversion table	80
Conversion table	81
Table of oil viscosity according to temperature	82
Table of pressure drops	83
Table of Elements	84
Table of chemical resistance of elastomers	85
Table of mechanical features of elastomers	86
Table of tapping holes	87
Map	90

<b>XV-0P</b>		
		
References: XP-001	References: XP-012	References: XP-017
<b>Standard Ø22 FLANGE</b>	<b>Ø22 BH FLANGE</b>	<b>Ø22 HY FLANGE</b>

<b>XV-1P</b>		
		
References: XP-101	References: XP-113	References: XP-119
<b>Ø25.4 FLANGE</b>	<b>Ø30 FLANGE</b>	<b>Ø32 BH FLANGE</b>
		
References : XP-140	References: XP-161	References: XP-168
<b>Ø32 HY FLANGE</b>	<b>Standard German Ø32 BH</b>	<b>Ø50.8 SAE AA FLANGE</b>

<b>XV-2P</b>		
		
References : XP-201	References : XP-210	References: XP-213
<b>Ø36.5 FLANGE</b>	<b>Ø50 BH FLANGE</b>	<b>Ø50 HY FLANGE</b>
		
References: XP-216	References : XP-217	References : XP-219
<b>Standard German Ø52 BH FLANGE</b>	<b>Standard German Ø80 FLANGE</b>	<b>Ø82.5 SAE A FLANGE</b>

<b>XV-3P</b>	
	
References : XP-301	References : XP-331
<b>BASE Ø50,8 - Standard</b>	<b>BASE Ø101,6 SAE B</b>

Vivoil Oleodinamica Vivoilo s.r.l. presents a new series of gear pumps called **XV-P**. The quality of the product has been improved on by exploiting new and innovative solutions, both technical and constructive, for which the company has been **awarded 3 patents**.

The pumps are divided into four groups:

**The main features of the XV-0P are the following:**

Displacements from 0.16 cm<sup>3</sup> / revolution to 2.28 cm<sup>3</sup>/revolution.

Maximum pressures up to **280 bar**.

Versions w/ flanges: Ø22 – Standard;  
Ø22 BH – Sagomata;  
Ø22 HY – Sagomata.

Rotation speeds up to **9000 rpm**.

Configurations with inlet and outlet in the body, flange and cover.

Available shafts: Cylindrical with Woodruff key;  
Milled shank;  
Tapered 1:8 Woodruff key.

**The main features of the XV-1P are the following:**

Displacements from 0.91 cm<sup>3</sup> / revolution to 9.88 cm<sup>3</sup>/ revolution.

Maximum pressures up to **300 bar**.

Versions w/ flanges: Ø25.4 – Standard European;  
Ø30 – Standard;  
Ø32 BH – Body-Shaped;  
Ø32 HY – Body-Shaped;  
Ø32 BH – Standard German – Body-Shaped;  
Ø50.8 – SAE AA

Rotation speeds up to **6000 rpm**

Configurations with inlet and outlet in the body, flange and cover.

Available shafts: Tapered 1:8 Woodruff key;  
Parallel with key;  
Milled shank;  
Splined.

**The main features of the XV-2P are the following:**

Displacements from 4.2 cm<sup>3</sup> / revolution a 39.6 cm<sup>3</sup>/ revolution.

Maximum pressures up to **300 bar**.

Versions w/ flanges: Ø36,5 – Standard Europea;  
Ø50 BH – Body-Shaped;  
Ø50 HY – Body-Shaped;  
Ø52 BH - Standard German – Body-Shaped;  
Ø80 – Standard German;  
Ø82,5 – SAE A.

Rotation speeds up to **3500 rpm**

Configurations with inlet and outlet in the body, flange and cover.

Available shafts: Tapered 1:8 Woodruff key;  
Parallel with key;  
Milled shank;  
Splined.

**The main features of the XV-3P are the following:**

Displacements from 14.89 cm<sup>3</sup> / revolution to 86.87cm<sup>3</sup>/ revolution.

Maximum pressures up to **320 bar**.

Versions w/ flanges: Ø50,8 – Standard European;

Rotation speeds up to **3000 rpm**.

Available shafts: Tapered 1:8 Woodruff key;  
Parallel with key;  
Splined.



**Summary: Displacements - Pressures - Speeds**

	Type	Displacement	Max. Pressure	Min speed	Max speed
<b>XV-0P</b>	XV-0P/0.17	0.16 cm <sup>3</sup> /rev	260 bar	700 rpm	9000 rpm
	XV-0P/0.25	0.24 cm <sup>3</sup> /rev	260 bar	700 rpm	9000 rpm
	XV-0P/0.45	0.45 cm <sup>3</sup> /rev	280 bar	700 rpm	9000 rpm
	XV-0P/0.57	0.56 cm <sup>3</sup> /rev	280 bar	700 rpm	9000 rpm
	XV-0P/0.76	0.75 cm <sup>3</sup> /rev	280 bar	700 rpm	9000 rpm
	XV-0P/0.98	0.92 cm <sup>3</sup> /rev	280 bar	700 rpm	6000 rpm
	XV-0P/1.27	1.26 cm <sup>3</sup> /rev	280 bar	700 rpm	6000 rpm
	XV-0P/1.52	1.48 cm <sup>3</sup> /rev	280 bar	700 rpm	6000 rpm
	XV-0P/2.30	2.28 cm <sup>3</sup> /rev	210 bar	700 rpm	5000 rpm
<b>XV-1P</b>	XV-1P/0.9	0.91 cm <sup>3</sup> /rev	280 bar	700 rpm	6000 rpm
	XV-1P/1.2	1.17 cm <sup>3</sup> /rev	290 bar	700 rpm	6000 rpm
	XV-1P/1.7	1.56 cm <sup>3</sup> /rev	290 bar	700 rpm	6000 rpm
	XV-1P/2.2	2.08 cm <sup>3</sup> /rev	290 bar	700 rpm	6000 rpm
	XV-1P/2.6	2.60 cm <sup>3</sup> /rev	300 bar	700 rpm	6000 rpm
	XV-1P/3.2	3.12 cm <sup>3</sup> /rev	300 bar	700 rpm	6000 rpm
	XV-1P/3.8	3.64 cm <sup>3</sup> /rev	300 bar	700 rpm	6000 rpm
	XV-1P/4.3	4.16 cm <sup>3</sup> /rev	300 bar	700 rpm	6000 rpm
	XV-1P/4.9	4.94 cm <sup>3</sup> /rev	300 bar	700 rpm	6000 rpm
	XV-1P/5.9	5.85 cm <sup>3</sup> /rev	300 bar	700 rpm	5000 rpm
	XV-1P/6.5	6.50 cm <sup>3</sup> /rev	300 bar	700 rpm	5000 rpm
<b>XV-2P</b>	XV-1P/7.8	7.54 cm <sup>3</sup> /rev	260 bar	700 rpm	5000 rpm
	XV-1P/9.8	9.88 cm <sup>3</sup> /rev	230 bar	700 rpm	4000 rpm
	XV-2P/4	4.2 cm <sup>3</sup> /rev	300 bar	700 rpm	3500 rpm
	XV-2P/6	6.0 cm <sup>3</sup> /rev	300 bar	700 rpm	3500 rpm
	XV-2P/9	8.4 cm <sup>3</sup> /rev	300 bar	700 rpm	3500 rpm
	XV-2P/11	10.8 cm <sup>3</sup> /rev	300 bar	700 rpm	3500 rpm
	XV-2P/14	14.4 cm <sup>3</sup> /rev	290 bar	700 rpm	3500 rpm
	XV-2P/17	16.8 cm <sup>3</sup> /rev	270 bar	700 rpm	3500 rpm
	XV-2P/19	19.2 cm <sup>3</sup> /rev	250 bar	700 rpm	3000 rpm
	XV-2P/22	22.8 cm <sup>3</sup> /rev	240 bar	700 rpm	3000 rpm
	XV-2P/26	26.2 cm <sup>3</sup> /rev	210 bar	700 rpm	3000 rpm
<b>XV-3P</b>	XV-2P/30	30.0 cm <sup>3</sup> /rev	200 bar	700 rpm	2500 rpm
	XV-2P/34	34.2 cm <sup>3</sup> /rev	190 bar	700 rpm	2500 rpm
	XV-2P/40	39.6 cm <sup>3</sup> /rev	180 bar	700 rpm	2000 rpm
	XV-3P/15	14.89 cm <sup>3</sup> /rev	320 bar	700 rpm	3000 rpm
	XV-3P/18	17.37 cm <sup>3</sup> /rev	320 bar	700 rpm	3000 rpm
	XV-3P/21	21.10 cm <sup>3</sup> /rev	300 bar	700 rpm	3000 rpm
	XV-3P/27	26.97 cm <sup>3</sup> /rev	270 bar	700 rpm	3000 rpm
	XV-3P/32	32.27 cm <sup>3</sup> /rev	270 bar	700 rpm	3000 rpm
	XV-3P/38	38.47 cm <sup>3</sup> /rev	270 bar	700 rpm	2800 rpm
	XV-3P/43	43.44 cm <sup>3</sup> /rev	250 bar	700 rpm	2800 rpm
	XV-3P/47	47.16 cm <sup>3</sup> /rev	250 bar	700 rpm	2800 rpm
	XV-3P/51	50.88 cm <sup>3</sup> /rev	250 bar	700 rpm	2800 rpm
	XV-3P/54	54.60 cm <sup>3</sup> /rev	250 bar	700 rpm	2300 rpm
	XV-3P/61	60.81 cm <sup>3</sup> /rev	220 bar	700 rpm	2300 rpm
XV-3P/64	64.53 cm <sup>3</sup> /rev	220 bar	700 rpm	2300 rpm	
XV-3P/70	70.74 cm <sup>3</sup> /rev	210 bar	700 rpm	2300 rpm	
XV-3P/74	74.46 cm <sup>3</sup> /rev	190 bar	700 rpm	2300 rpm	
XV-3P/90	86.87 cm <sup>3</sup> /rev	160 bar	700 rpm	2300 rpm	

**General technical data**

Type of fluid to be used	Mineral-based hydraulic oil HLP HV (D IN 51524)
Minimum operating viscosity	10 mm <sup>2</sup> /s
Maximum operating viscosity	100 mm <sup>2</sup> /s
Maximum admissible viscosity at start-up	1500 mm <sup>2</sup> /s
Recommended viscosity	20 mm <sup>2</sup> /s - 100 mm <sup>2</sup> /s
Ambient temperature	-20 °C - 60°C
Fluid operating temperature	-15°C - 80°C
Recommended fluid operating temperature	30°C - 50° C
For temperatures above 120°C	Request FKM seals ( V iton)
Max. inlet fluid suction pressure (IN)	0.02-0.08 bars
Max. inlet fluid pressure (IN)	0.3 - 0.5 bars (for higher pressures consult the manufacturer)
Inlet fluid filtering (IN)	30 - 60 Microns
Outlet fluid filtering (OUT)	10 - 25 Microns
Max. inlet fluid speed (IN)	0.5 - 1.5 m/s
Max. outlet fluid speed (OUT)	3.0 - 5.5m/s
Use of water-glycol (HF-C)	max n. of revolutions 1100 rpm; max pressure 170 bars

**Flow rate tables**

TYPE	cm3/ rev	Flow rate l/min	rpm														Flow rate l/min		
			700	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	7000	8000		9000	
XV 0P/0.17	0,16	Flow rate l/min	0,106	0,152	0,228	0,304	0,380	0,456	0,532	0,608	0,684	0,760	0,836	0,912	1,064	1,216	1,368	Flow rate l/min	
XV 0P/0.25	0,24		0,160	0,228	0,342	0,456	0,570	0,684	0,798	0,912	1,026	1,140	1,254	1,368	1,596	1,824	2,052		
XV 0P/0.45	0,45		0,299	0,428	0,641	0,855	1,069	1,283	1,496	1,710	1,924	2,138	2,351	2,565	2,993	3,420	3,848		
XV 0P/0.57	0,56		0,372	0,532	0,798	1,064	1,330	1,596	1,862	2,128	2,394	2,660	2,926	3,192	3,724	4,256	4,788		
XV 0P/0.76	0,75		0,499	0,713	1,069	1,425	1,781	2,138	2,494	2,850	3,206	3,563	3,919	4,275	4,988	5,700	6,413		
XV 0P/0.98	0,92		0,612	0,874	1,311	1,748	2,185	2,622	3,059	3,496	3,933	4,370	4,807	5,244					
XV 0P/1.27	1,26		0,838	1,197	1,796	2,394	2,993	3,591	4,190	4,788	5,387	5,985	6,584	7,182					
XV 0P/1.52	1,48		0,984	1,406	2,109	2,812	3,515	4,218	4,921	5,624	6,327	7,030	7,733	8,436					
XV 0P/2.30	2,28		1,516	2,166	3,249	4,332	5,415	6,498	7,581	8,664	9,747	10,830							

TYPE	cm3/ rev	Flow rate l/min	rpm											Flow rate l/min	
			700	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500		6000
XV 1P/0.9	0,91	Flow rate l/min	0,630	0,900	1,350	1,800	2,250	2,700	3,150	3,600	4,050	4,500	4,950	5,400	Flow rate l/min
XV 1P/1.2	1,17		0,840	1,200	1,800	2,400	3,000	3,600	4,200	4,800	5,400	6,000	6,600	7,200	
XV 1P/1.7	1,56		1,190	1,700	2,550	3,400	4,250	5,100	5,950	6,800	7,650	8,500	9,350	10,200	
XV 1P/2.2	2,08		1,540	2,200	3,300	4,400	5,500	6,600	7,700	8,800	9,900	11,000	12,100	13,200	
XV 1P/2.6	2,6		1,820	2,600	3,900	5,200	6,500	7,800	9,100	10,400	11,700	13,000	14,300	15,600	
XV 1P/3.2	3,12		2,240	3,200	4,800	6,400	8,000	9,600	11,200	12,800	14,400	16,000	17,600	19,200	
XV 1P/3.8	3,64		2,660	3,800	5,700	7,600	9,500	11,400	13,300	15,200	17,100	19,000	20,900	22,800	
XV 1P/4.3	4,16		3,010	4,300	6,450	8,600	10,750	12,900	15,050	17,200	19,350	21,500	23,650	25,800	
XV 1P/4.9	4,94		3,430	4,900	7,350	9,800	12,250	14,700	17,150	19,600	22,050	24,500	26,950	29,400	
XV 1P/5.9	5,85		4,130	5,900	8,850	11,800	14,750	17,700	20,650	23,600	26,550	29,500			
XV 1P/6.5	6,5		4,550	6,500	9,750	13,000	16,250	19,500	22,750	26,000	29,250	32,500			
XV 1P/7.8	7,54		5,460	7,800	11,700	15,600	19,500	23,400	27,300	31,200	35,100	39,000			
XV 1P/9.8	9,88		6,860	9,800	14,700	19,600	24,500	29,400	34,300	39,200					

TYPE	cm3/rev		rpm							
			700	1000	1500	2000	2500	3000		3500
XV 2P/4	4,2	Flow rate l/min	2,800	4,000	6,000	8,000	10,000	12,000	14,000	Flow rate l/min
XV 2P/6	6		4,200	6,000	9,000	12,000	15,000	18,000	21,000	
XV 2P/9	8,4		6,300	9,000	13,500	18,000	22,500	27,000	31,500	
XV 2P/11	10,8		7,700	11,000	16,500	22,000	27,500	33,000	38,500	
XV 2P/14	14,4		9,800	14,000	21,000	28,000	35,000	42,000	29,000	
XV 2P/17	16,8		11,900	17,000	25,500	34,000	42,500	51,000	59,500	
XV 2P/19	19,2		13,300	19,000	28,500	38,000	47,500	57,000		
XV 2P/22	22,8		15,400	22,000	33,000	44,000	55,000	66,000		
XV 2P/26	26,2		18,200	26,000	39,000	52,000	65,000	78,000		
XV 2P/30	30		21,000	30,000	45,000	60,000	75,000			
XV 2P/34	34,2		23,800	34,000	51,000	68,000	85,000			
XV 2P/40	39,6		28,000	40,000	60,000	80,000				

TYPE	cm3/rev		rpm							
			700	1000	1500	2000	2300	2500		3000
XV 3P/15	14,89	Flow rate l/min	9,90	14,15	21,22	28,29	32,54	35,37	42,44	Flow rate l/min
XV 3P/18	17,37		11,55	16,51	24,76	33,01	37,96	41,26	49,52	
XV 3P/21	21,10		14,03	20,04	30,06	40,08	46,10	50,11	60,13	
XV 3P/27	26,97		17,94	25,62	38,43	51,24	58,93	64,05	76,86	
XV 3P/32	32,27		21,46	30,65	45,98	61,31	70,50	76,63	91,96	
XV 3P/38	38,47		25,58	36,55	54,82	73,09	84,06	91,37		
XV 3P/43	43,44		28,88	41,26	61,89	82,53	94,91	103,16		
XV 3P/47	47,16		31,36	44,80	67,20	89,60	103,04	112,00		
XV 3P/51	50,88		33,84	48,34	72,51	96,67	111,17			
XV 3P/54	54,60		36,31	51,87	77,81	103,75	119,31			
XV 3P/61	60,81		40,44	57,77	86,65	115,54	132,87			
XV 3P/64	64,53		42,91	61,31	91,96	122,61	141,00			
XV 3P/70	70,74		47,04	67,20	100,80	134,40	154,56			
XV 3P/74	74,46		49,52	70,74	106,11	141,47	162,70			
XV 3P/90	86,87		57,77	82,53	123,79	165,05	189,81			

**TORQUES ALLOWED ON SHAFT:**

FORMULA FOR EVALUATING SHAFT	SHAFT [IDENTIFIER] - CODE - DESCRIPTION	T.2 [Nm]
$T.2 \leq \frac{v_i \times \Delta p}{20 \times \pi \times \eta m}$ <p>T.2 = max. torque allowed by shaft [ Nm]</p>	<b>XV-0P</b> [A] - CI001 - Parallel $\varnothing$ 7 - M 7x1 - key thk sp.2	2
	[B] - CF001 - Milled shank $\varnothing$ 7 - sp. 5	9,2
	[F] - CF005 - Milled shank $\varnothing$ 7 - sp.4,5 L = 9	8
	<b>XV-1P</b> [A] - CI001 - Parallel $\varnothing$ 12 - M10x1 - key thk. 3	25,8
	[B] - CI002 - Parallel $\varnothing$ 12.7 - key thk. 3.2 (SAE)	32,8
	[C] - CF001 - Milled shank $\varnothing$ 10 - thk.5 ("BH" Standard German)	13,8
	[D] - CF002 - Milled shank $\varnothing$ 10 - thk.5	13,8
	[E] - CF003 - Milled shank $\varnothing$ 11 - thk.6.63 (SAE)	25,8
	[F] - CO001 - Tapered 1:8 - $\varnothing$ 10 - M7x1 - key thk.2.4	43
	[G] - CO002 - Tapered 1:8 - $\varnothing$ 14 - M10x1 - key thk.3	119,8
	[ I ] - CO004 - Tapered 1:8 - $\varnothing$ 12.7 - 5/16" 24UNF-2A - key thk.3.2 (SAE)	90,4
	[J] - SCF04 - Splined $\varnothing$ 11.7 - z=6, H=17.5, m=1.6, DIN 5482 12x9	22,6
	[K] - SCF05 - Splined $\varnothing$ 12.344, z=9, H=19, SAE J498 9T 20/40DB	32,2
	[L] - SCF02 - Splined $\varnothing$ 11.9, z=15, H=17.5, m=0.75	42,8
	[O] - CO002+HK - Tapered 1:8 - $\varnothing$ 14 - M10x1, HK 14-12, key thk.3	119,8
	[P] - CI001+HK - Parallel $\varnothing$ 12 - M10x1 with bearing HK 14-12 - key thk.3	25,8
	[Q] - SCF01 - Splined $\varnothing$ 11.9, z=15, H=9, m=0.75	42,8
	[R] - SCF03 - Splined $\varnothing$ 11.9, z=15, H=9, m=0.75	42,8
	<b>XV-2P</b> [A] - CI001 - Parallel $\varnothing$ 15 - M6x1 - key thk.4	44.1
	[B] - CI002 - Parallel $\varnothing$ 15.875 - 1/4"28-UNF key thk.4 (SAE A)	67.5
	[C] - CF001 - Miled shank $\varnothing$ 15 - thk.8 ("BH" Standard German)	60.5
	[E] - CO001 - Tapered 1:8 - $\varnothing$ 17,4 - M12x1,5 - key thk.4	233.2
	[F] - CO002 - Tapered 1:5 - $\varnothing$ 17,4 - M12x1,5 - key thk.3	233.2
	[G] - SCF02 - Splined $\varnothing$ 16,5 - z=9, H=13, m=1.6 DIN 5482 17x14	86.1
	[H] - SCF03 - Splined $\varnothing$ 16.5 - z=9, H=18,8, m=1,6 DIN 5482 17x14	86.1
	[ I ] - SCF04 - Splined $\varnothing$ 15.456 z=9, H=22.5, SAE J498 9T 16/32DP	67.1
	[K] - SCF05 - Splined $\varnothing$ 16.5 z=9 H=8,1 m=1.6 DIN 5482 17x14	86.2
[L] - SCF01 - Splined $\varnothing$ 16.5 z=9 H=9,2 m=1.6 DIN 5482 17x14	86.2	
[M] - CO001 - Tapered 1:8 - $\varnothing$ 17,4 - M12x1,5 - key thk.3,2	233.2	
<b>XV-3P</b> [A] - CO001 - Tapered 1:8 - $\varnothing$ 22 - M14x1.5 - key thk.4	482	
[B] - CI001 - Parallel $\varnothing$ 20 - M8 - key thk.5	181	
[C] - SCF03 - Splined $\varnothing$ 21.5, z=13, H=25, m=1,6	223	
[H] - CI004 - Parallel $\varnothing$ 22.225- 1/4"28-UNF key thk.6.35 (SAE B)	180	
[ I ] - SCF04 - Splined $\varnothing$ 21.8059, z=13, H=25, SAE J498 9T 16/32DP	264	

**NOTES:**

For assemblies with a coupling, you should choose one as balanced as possible in order to reduce the vibrations and dynamic stresses to which the pump shaft may be subject.

**Always make sure that the torque applied is less than or equal to the admissible torque of the shaft.**

Do not apply a direct axial or radial load on the pump shaft; if necessary, use suitable supports.

Always use well-filtered oils containing no water or other emulsifying substance.

Never run the pump with oil and air solutions.

For pumps with outlets on the flange, it is recommended not to exceed a flow rate of

4 l/min	XV-0P
20 l/min.	XV-1P
35 l/min	XV-2P

## Useful calculation formulas

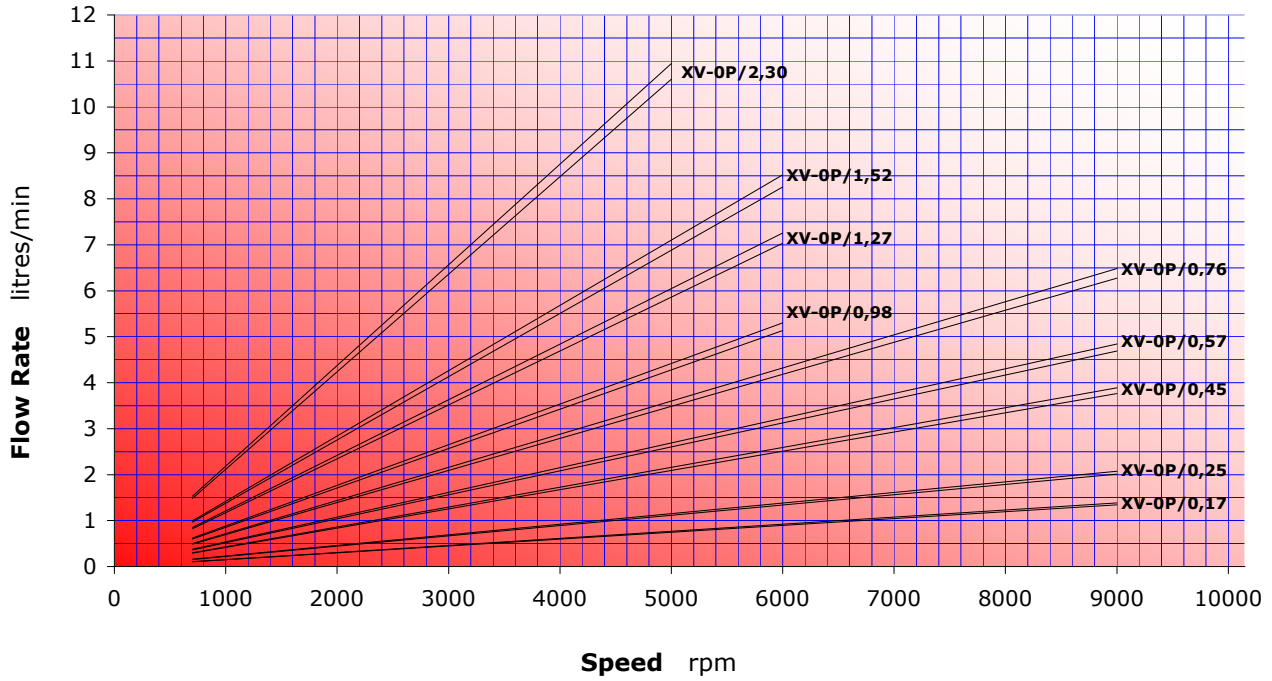
SYMBOL, UNIT OF MEASUREMENT, DESCRIPTION		
qv	l/min	Flow rate
vi	cm <sup>3</sup> /rev.	Displacement (volume of oil displaced per complete revolution of the shaft)
n	rpm	Shaft rotation speed
p1	bar	inlet pressure
p2	bar	outlet pressure
Δp	bar	Δp=p2 - p1 difference between outlet (OUT) and inlet (IN) pressure
Ph	kW	Hydraulic power delivered
Pm	kW	Mechanical power absorbed
T	Nm	Torque absorbed by shaft
ηv	-	0.91 – 0.96 volumetric efficiency (volumetric ratio between operation under load and loadless operation)
ηm	-	0.85 – 0.90 mechanical efficiency
ηt	-	ηt = ηv x ηm total efficiency

Basic Formulas	Derived Formulas	
$qv = \frac{vi \times n}{1000} \times \eta v$	$vi = \frac{qv \times 1000}{n \times \eta v}$	$n = \frac{qv \times 1000}{vi \times \eta v}$
$T = \frac{vi \times \Delta p}{20 \times \pi \times \eta m}$	$vi = \frac{T \times 20 \times \pi \times \eta m}{\Delta p}$	$\Delta p = \frac{T \times 20 \times \pi \times \eta m}{vi}$
$Ph = \frac{qv \times \Delta p}{600}$	$qv = \frac{Ph \times 600}{\Delta p}$	$\Delta p = \frac{Ph \times 600}{qv}$
$Pm = \frac{vi \times \Delta p \times n}{600000 \times \eta m}$	$vi = \frac{Pm \times 600000 \times \eta m}{\Delta p \times n}$	$\Delta p = \frac{600000 \times \eta m}{vi \times n}$

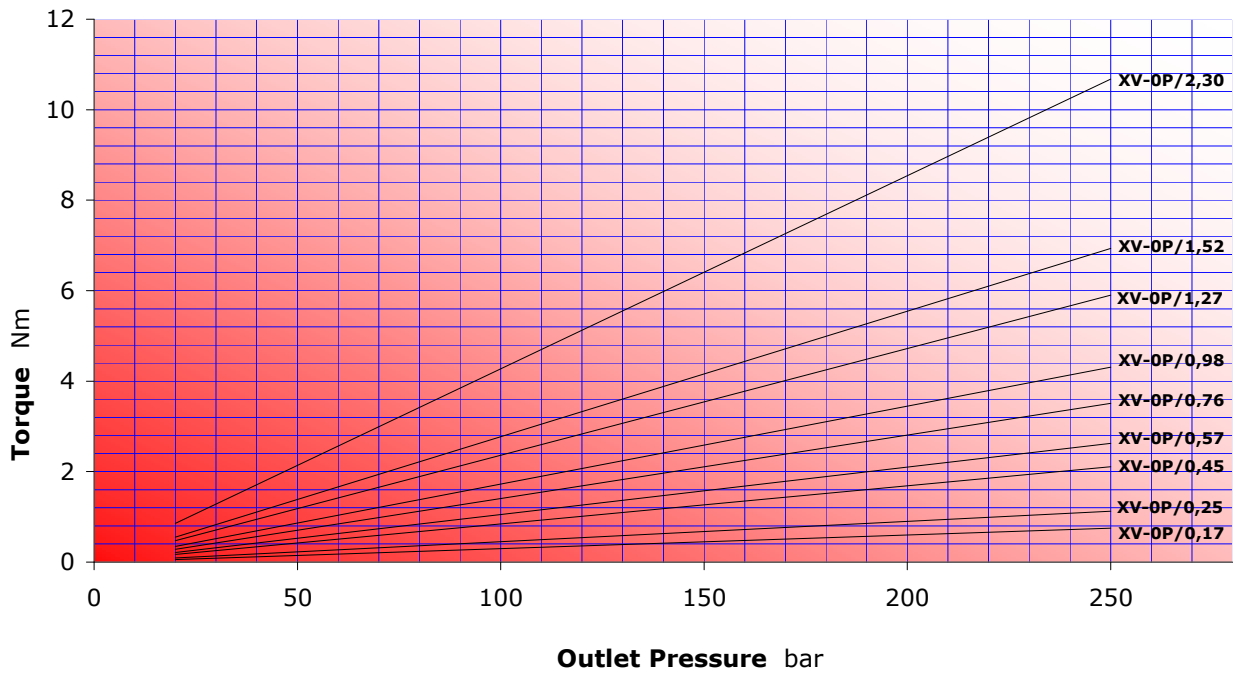
## Constructive features

PART	MATERIAL	MECHANICAL FEATURES
<b>PUMP BODY</b>	Extruded alloy Series 7000, heat treated and anodised	Rp = 345 N/mm <sup>2</sup> (Yield strength) Rm = 382 N/mm <sup>2</sup> (Breaking strength)
<b>FLANGE AND COVER</b>	Die-cast aluminium alloy with excellent mechanical features, heat treated and anodised	Rp = 310÷350 N/mm <sup>2</sup> (Yield strength) Rm = 350÷400 N/mm <sup>2</sup> (Breaking strength)
<b>GEAR BUSH BEARINGS</b>	Special heat-treated tin alloy with excellent mechanical features and high anti-friction capacity. Self-lubricating bushes DU	Rp = 350 N/mm <sup>2</sup> (Yield strength) Rm = 390 N/mm <sup>2</sup> (Breaking strength)
<b>GEARS</b>	Steel UNI 7846	Rs = 980 N/mm <sup>2</sup> (Yield strength) Rm = 1270÷1570 N/mm <sup>2</sup> (Breaking strength)
<b>SEALS</b>	A 727 Standard Acrylonitrile F 975 Viton FKM	70 Shore, thermal resistance 120°C 80 Shore, thermal resistance 200°C
<b>BACK-UP RINGS</b>	Virgin PTFE Tecnil Q3	

**XV-0P CHARACTERISTIC FLOW RATE CURVES**



**XV-0P MOTOR TORQUE**



### XV0-P with Flange $\varnothing 22$ Std, BH-HY (ref .from XP- 001 to XP-017)

When changing the direction of rotation of the XV-0P pump, it is not necessary to change the flange, as the same one is used.

When disassembling and reassembling the pump, take special care to ensure that seals and back-up rings do not come out of place and that no foreign bodies, such as shavings or dirt in general, get inside the pump.

Flange $\varnothing 22$ (ref. from XP- 001 to: XP- 017)					
<p>Remove the key, nut and washer from the shaft. Loosen and remove the fastening screws.</p>	<p>Take off the flange.</p>	<p>Take out the gears and upper bush.</p> <p>Warning!! The bush <b>must never</b> be turned.</p>	<p>Invert the positions of the driven and driving shafts.</p> <p>Warning! The body and cover must not be turned. Use the marking on the body as your reference.</p>	<p>Fit the previously removed flange back in place taking care to clean the body-base contact surfaces.</p>	<p>Insert the screws back in place and tighten the nuts with a torque of 11.7 Nm to 13.7 Nm. Check that the shaft turns on completing the operation.</p>
<p>Note: with this rotation change system, the <b>inlets</b> and <b>outlets</b> remain unchanged.</p>					

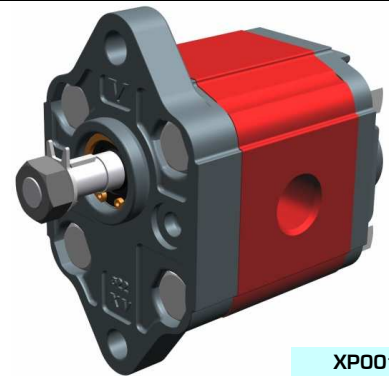
# unidirectional pump - series XV

**XV-OP**

**STANDARD PUMP**  
**ø22 FLANGE - PARALLEL SHAFT**

**X 0 P 06 02 A B B A**

Series	X	series XV
Group	0	group 0
Category	P	unidirectional pump
Displacement	06	0.76
Flange	02	Ø22 right rotation
Shaft	A	CI001 - Parallel ø7 - M7x1 - key thk. 2
Body	IN	inlet - 1/4" GAS
	OUT	outlet - 1/4" GAS
Cover	A	standard



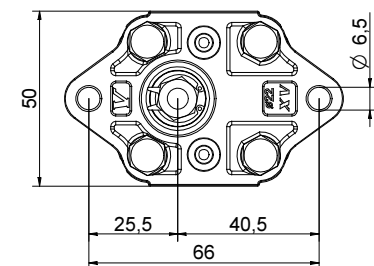
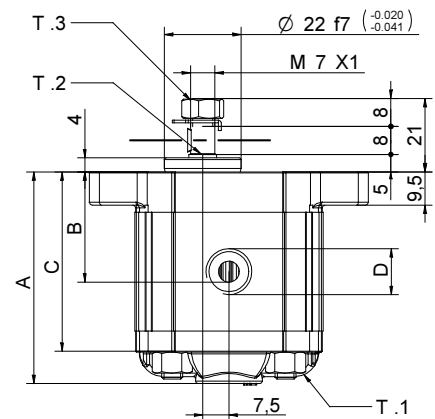
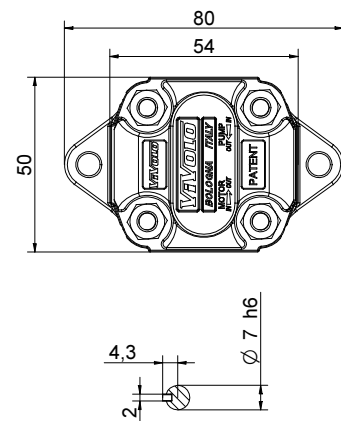
**XP001**

**Technical data table**

TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-OP/0.17	0,16	220	260	X 0 P 01 01 A B B A	X 0 P 01 02 A B B A
XV-OP/0.25	0,24	220	260	X 0 P 02 01 A B B A	X 0 P 02 02 A B B A
XV-OP/0.45	0,45	220	280	X 0 P 04 01 A B B A	X 0 P 04 02 A B B A
XV-OP/0.57	0,56	220	280	X 0 P 05 01 A B B A	X 0 P 05 02 A B B A
XV-OP/0.76	0,75	220	280	X 0 P 06 01 A B B A	X 0 P 06 02 A B B A
XV-OP/0.98	0,92	220	280	X 0 P 07 01 A B B A	X 0 P 07 02 A B B A
XV-OP/1.27	1,26	220	280	X 0 P 09 01 A B B A	X 0 P 09 02 A B B A
XV-OP/1.52	1,48	220	280	X 0 P 11 01 A B B A	X 0 P 11 02 A B B A
XV-OP/2.30	2,28	190	210	X 0 P 13 01 A B B A	X 0 P 13 02 A B B A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft



07/12/04 XOP0602ABBA.dft

T.1 = 11.7÷13.7 [Nm] - screw tightening torque M6

T.3 = 11.5 [Nm] - torque wrench setting 11

T.2 = 2.1 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).



# Table of variations

**XV-OP**

## Standard ø22 FLANGE

Standard ø22 FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	<b>01</b>		<b>02</b>	CI001 - Parallel T.2 = 2.1 [Nm]	<b>A</b>	CF001 - Milled shank T.2 = 9.2 [Nm]	<b>B</b>				<b>A</b>
	<b>03</b>		<b>04</b>	CF005 - Milled shank T.2 = 8.4 [Nm]	<b>F</b>	CO001 - Tapered T.2 = 21.9 [Nm]	<b>E</b>				<b>B</b>
	<b>05</b>		<b>06</b>								<b>C</b>
	<b>07</b>		<b>08</b>								<b>D</b>

Displacement	
TYPE	CODE
XV-0P/0.17	<b>01</b>
XV-0P/0.25	<b>02</b>
XV-0P/0.45	<b>04</b>
XV-0P/0.57	<b>05</b>
XV-0P/0.76	<b>06</b>
XV-0P/0.98	<b>07</b>
XV-0P/1.27	<b>09</b>
XV-0P/1.52	<b>11</b>
XV-0P/2.30	<b>13</b>

Standard bodies				
Displacement cm <sup>3</sup> /rev	Standard threads			
	0.17	B - B	Z - B	Z - Z
0.25	B - B	Z - B	Z - Z	
0.45	B - B	Z - B	Z - Z	
0.57	B - B	Z - B	Z - Z	
0.76	B - B	Z - B	Z - Z	
0.98	B - B	Z - B	Z - Z	
1.27	B - B	Z - B	Z - Z	
1.52	B - B	Z - B	Z - Z	
2.30	B - B	Z - B	Z - Z	

Table showing standard flange and thread combinations available in stock

			<b>N</b>
Internal drainage			
			<b>O</b>
External drainage			

Body (threads/flanges)													
	<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>E</b>		<b>F</b>		<b>G</b>
	<b>H</b>		<b>I</b>	<b>Closed Body</b>		<b>Z</b>							

# unidirectional pump - series XV

**XV-OP**

**BH TYPE PUMP**

**ø22 BODY-SHAPED FLANGE - MILLED SHANK**

**X 0 P 06 12 B B B A**

Series	X	series XV
Group	0	group 0
Category	P	unidirectional pump
Displacement	06	0.76
Flange	12	Ø22 BH right rotation
Shaft	B	CF001 - Milled shank ø7 - thk.5
Body	IN	inlet - 1/4" GAS
	OUT	outlet - 1/4" GAS
Cover	A	standard



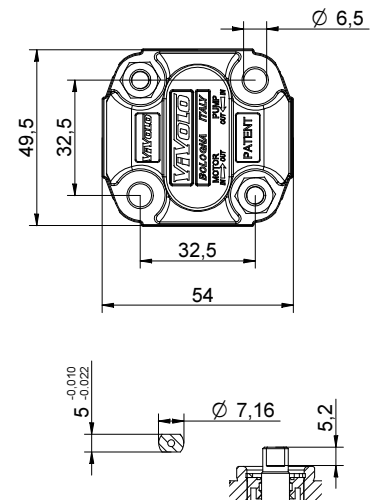
**XP012**

**Technical data table**

TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-OP/0.17	0,16	220	260	X 0 P 01 11 B B B A	X 0 P 01 12 B B B A
XV-OP/0.25	0,24	220	260	X 0 P 02 11 B B B A	X 0 P 02 12 B B B A
XV-OP/0.45	0,45	220	280	X 0 P 04 11 B B B A	X 0 P 04 12 B B B A
XV-OP/0.57	0,56	220	280	X 0 P 05 11 B B B A	X 0 P 05 12 B B B A
XV-OP/0.76	0,75	220	280	X 0 P 06 11 B B B A	X 0 P 06 12 B B B A
XV-OP/0.98	0,92	220	280	X 0 P 07 11 B B B A	X 0 P 07 12 B B B A
XV-OP/1.27	1,26	220	280	X 0 P 09 11 B B B A	X 0 P 09 12 B B B A
XV-OP/1.52	1,48	220	280	X 0 P 11 11 B B B A	X 0 P 11 12 B B B A
XV-OP/2.30	2,28	190	210	X 0 P 13 11 B B B A	X 0 P 13 12 B B B A

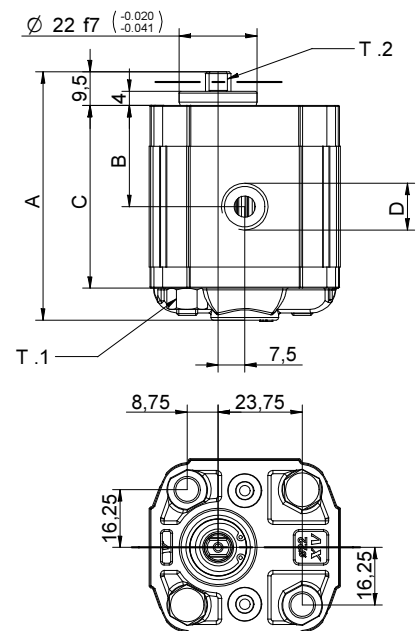
P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft



**Dimensions table**

TYPE	Weight kg	A	B	C	D	D
		mm	mm	mm	IN	OUT
XV-OP/0.17	0,400	55,8	26,2	46,8	1/4" BSPP	1/4" BSPP
XV-OP/0.25	0,410	56,4	26,5	47,4	1/4" BSPP	1/4" BSPP
XV-OP/0.45	0,420	58,0	27,3	49,0	1/4" BSPP	1/4" BSPP
XV-OP/0.57	0,430	59,0	27,8	50,0	1/4" BSPP	1/4" BSPP
XV-OP/0.76	0,440	60,5	28,5	51,5	1/4" BSPP	1/4" BSPP
XV-OP/0.98	0,460	62,0	29,3	53,0	1/4" BSPP	1/4" BSPP
XV-OP/1.27	0,480	64,5	30,5	55,5	1/4" BSPP	1/4" BSPP
XV-OP/1.52	0,500	66,5	31,5	57,5	1/4" BSPP	1/4" BSPP
XV-OP/2.30	0,560	72,5	34,5	63,5	1/4" BSPP	1/4" BSPP



07/12/04 XOP061288BA.dft

T.1 = 11.7÷13.7 [Nm] - screw tightening torque M6

T.2 = 9.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

# Table of variations

**XV-OP**

## ø22 "BH" Body-Shaped FLANGE

ø22 "BH" Body-Shaped FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	11		12	CI001 - Parallel T.2 = 2.1 [Nm]	A	CF001 - Milled shank T.2 = 9.2 [Nm]	B				A
	13		14	CF005 - Milled shank T.2 = 8.4 [Nm]	F	CO001 - Tapered T.2 = 21.9 [Nm]	E				B
	15		16								C
	17		18								D

Displacement	
TYPE	CODE
XV-0P/0.17	01
XV-0P/0.25	02
XV-0P/0.45	04
XV-0P/0.57	05
XV-0P/0.76	06
XV-0P/0.98	07
XV-0P/1.27	09
XV-0P/1.52	11
XV-0P/2.30	13

Standard bodies				
Displacement cm <sup>3</sup> /rev	Standard threads			
	0.17	B - B	Z - B	Z - Z
0.25	B - B	Z - B	Z - Z	
0.45	B - B	Z - B	Z - Z	
0.57	B - B	Z - B	Z - Z	
0.76	B - B	Z - B	Z - Z	
0.98	B - B	Z - B	Z - Z	
1.27	B - B	Z - B	Z - Z	
1.52	B - B	Z - B	Z - Z	
2.30	B - B	Z - B	Z - Z	

Table showing standard flange and thread combinations available in stock

			N
Internal drainage			
			O
External drainage			

Body (threads/flanges)													
	A		B		C		D		E		F		G
	H		I	Closed Body		Z							

# unidirectional pump - series XV

**XV-OP**

HY TYPE PUMP

Ø22 BODY-SHAPED FLANGE - MILLED SHANK

**X 0 P 06 22 B B B A**

Series	X	series XV
Group	0	group 0
Category	P	unidirectional pump
Displacement	06	0.76
Flange	22	Ø22 HY right rotation
Shaft	B	CF001 - Milled shank ø7 - thk.5
Body	IN	inlet - 1/4" GAS
	OUT	outlet - 1/4" GAS
Cover	A	standard



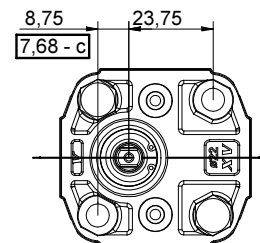
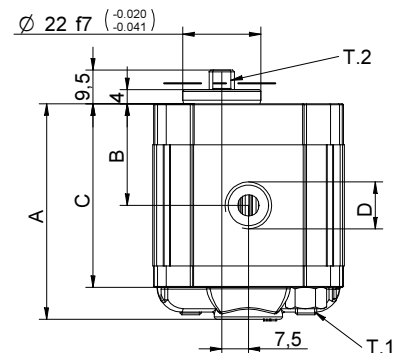
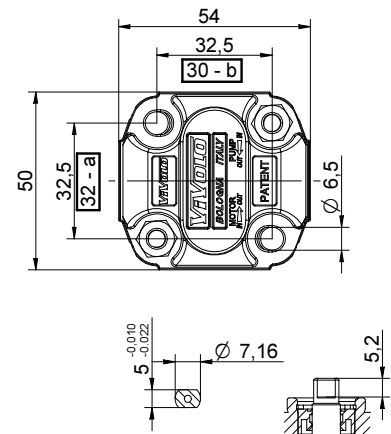
XP017

### Technical data table

TYPE	Displacement cm3/rev	Max. Pressure		CODE	
		P1 bar	P3 bar	Left rotation	Right rotation
XV-OP/0.17	0,16	220	260	X 0 P 01 21 B B B A	X 0 P 01 22 B B B A
XV-OP/0.25	0,24	220	260	X 0 P 02 21 B B B A	X 0 P 02 22 B B B A
XV-OP/0.45	0,45	220	280	X 0 P 04 21 B B B A	X 0 P 04 22 B B B A
XV-OP/0.57	0,56	220	280	X 0 P 05 21 B B B A	X 0 P 05 22 B B B A
XV-OP/0.76	0,75	220	280	X 0 P 06 21 B B B A	X 0 P 06 22 B B B A
XV-OP/0.98	0,92	220	280	X 0 P 07 21 B B B A	X 0 P 07 22 B B B A
XV-OP/1.27	1,26	220	280	X 0 P 09 21 B B B A	X 0 P 09 22 B B B A
XV-OP/1.52	1,48	220	280	X 0 P 11 21 B B B A	X 0 P 11 22 B B B A
XV-OP/2.30	2,28	190	210	X 0 P 13 21 B B B A	X 0 P 13 22 B B B A

P1) Max. working pressure - P3) Max. peak pressure

For heavy-duty applications, it is recommended to check the admissible torque of the shaft



### Dimensions table

TYPE	Weight kg	A	B	C	D	D
		mm	mm	mm	IN	OUT
XV-OP/0.17	0,400	55,8	26,2	46,8	1/4" BSPP	1/4" BSPP
XV-OP/0.25	0,410	56,4	26,5	47,4	1/4" BSPP	1/4" BSPP
XV-OP/0.45	0,420	58,0	27,3	49,0	1/4" BSPP	1/4" BSPP
XV-OP/0.57	0,430	59,0	27,8	50,0	1/4" BSPP	1/4" BSPP
XV-OP/0.76	0,440	60,5	28,5	51,5	1/4" BSPP	1/4" BSPP
XV-OP/0.98	0,460	62,0	29,3	53,0	1/4" BSPP	1/4" BSPP
XV-OP/1.27	0,480	64,5	30,5	55,5	1/4" BSPP	1/4" BSPP
XV-OP/1.52	0,500	66,5	31,5	57,5	1/4" BSPP	1/4" BSPP
XV-OP/2.30	0,560	72,5	34,5	63,5	1/4" BSPP	1/4" BSPP

T.1 = 11.7÷13.7 [Nm] - screw tightening torque M6

T.2 = 9.2 [Nm] - admissible shaft torque (N.B. When choosing a shaft, always check the admissible torque).

**NOTE: This type of pump is also interchangeable**

**with distance between centres of fastening in M5 (see dim. a, b, c).**

07/12/04 XOP0622888A.dft

# Table of variations

**XV-OP**

## ø22 "HY" Body-Shaped FLANGE

ø22 "HY" Body-Shaped FLANGE				Shaft				Cover			
Left rotation		Right rotation						Left rotation		Right rotation	
	21		22	CI001 - Parallel T.2 = 2.1 [Nm]	A	CF001 - Milled shank T.2 = 9.2 [Nm]	B			A	
	23		24	CF005 - Milled shank T.2 = 8.4 [Nm]	F	CO001 - Tapered T.2 = 21.9 [Nm]	E			B	
	25		26							C	
	27		28							D	

Displacement	
TYPE	CODE
XV-0P/0.17	01
XV-0P/0.25	02
XV-0P/0.45	04
XV-0P/0.57	05
XV-0P/0.76	06
XV-0P/0.98	07
XV-0P/1.27	09
XV-0P/1.52	11
XV-0P/2.30	13

Standard bodies				
Displacement cm <sup>3</sup> /rev	Standard threads			
	0.17	B - B	Z - B	Z - Z
0.25	B - B	Z - B	Z - Z	
0.45	B - B	Z - B	Z - Z	
0.57	B - B	Z - B	Z - Z	
0.76	B - B	Z - B	Z - Z	
0.98	B - B	Z - B	Z - Z	
1.27	B - B	Z - B	Z - Z	
1.52	B - B	Z - B	Z - Z	
2.30	B - B	Z - B	Z - Z	

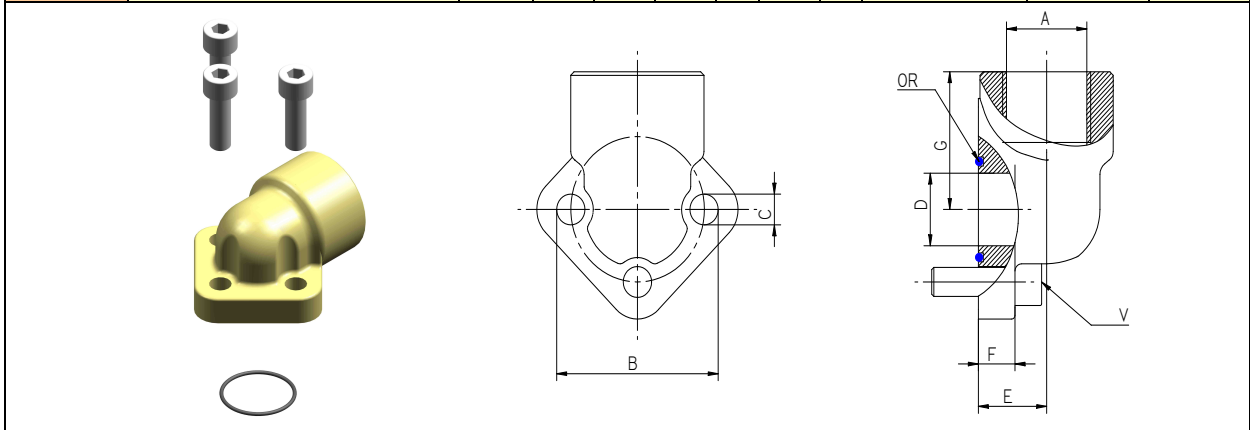
Table showing standard flange and thread combinations available in stock

		N	
Internal drainage			
		O	
External drainage			

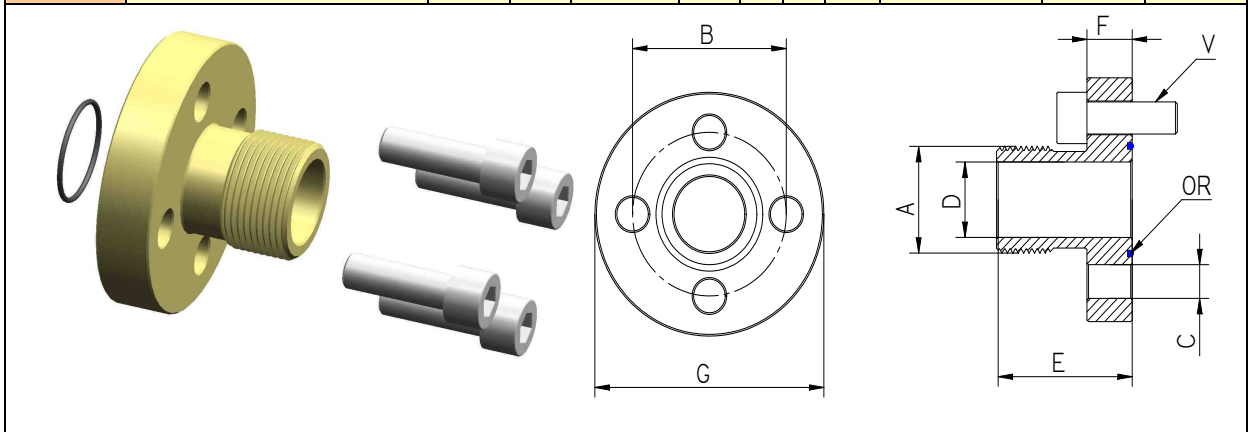
Body (threads/flanges)													
	A		B		C		D		E		F		G
	H		I	Closed Body		Z							

**90° STEEL ELBOWS**

Code	Type	A	B	C	D	E	F	G	OR	V	weigth
									O ring	Screw	
8KRG001	RG 26/12-3/8"BSP	3/8"	26	5,5	12	18	9,5	27	ø14,00x1,78	M5x18	0,13
8KRG002	RG 26/12-1/2"BSP	1/2"	26	5,5	12	18	9,5	27	ø14,00x1,78	M5x18	0,12
8KRG003	RG 30/13,5 -3/8"BSP	3/8"	30	6,5	13,5	18	9,5	27	ø15,88x2,62	M6x20	0,17
8KRG004	RG 30/13,5 -1/2"BSP	1/2"	30	6,5	13,5	18	9,5	27	ø15,88x2,62	M6x20	0,16
8KRG005	RG 40/20-1/2"BSP	1/2"	40	8,5	20	21	10,5	38	ø23,81x2,62	M8x25	0,36
8KRG006	RG 40/20-3/4"BSP	3/4"	40	8,5	20	21	10,5	38	ø23,81x2,62	M8x25	0,32
8KRG007	RG 40/23-3/4"BSP	3/4"	40	8,5	23,5	21	10,5	38	ø25,12x1,78	M8x25	0,29
8KRG008	RG 51/27-1"BSP	1"	51	10,5	27	27	13,5	47	ø31,42x2,62	M10x30	0,7
8KRG009	RG 51/27-3/4" BSP	3/4"	51	10,5	27	27	13,5	47	ø31,42x2,62	M10x30	0,7
8KRG011	RG 56/34-3/4" BSP	3/4"	56	10,5	34	27	13,5	47	ø37,77x2,62	M10x30	0,72
8KRG012	RG 62/36-1"1/4 BSP	1"1/4	62	10,5	36	36	19	56	ø41,28x3,53	M10x30	0,94
8KRG015	RG 62/36-1"1/4 BSP M12	1"1/4	62	12,5	36	36	19	56	ø41,28x3,53	M12x35	0,94
8KRG013	RG 72,5/45-1"1/2 BSP	1"1/2	72,5	12,5	45	38	16	58	ø49,20x3,53	M12x35	1,23
8KRG014	RG 92/65-2" BSP	2	92	12,5	65	50	21	75	ø69,85x3,53	M12x40	1,65

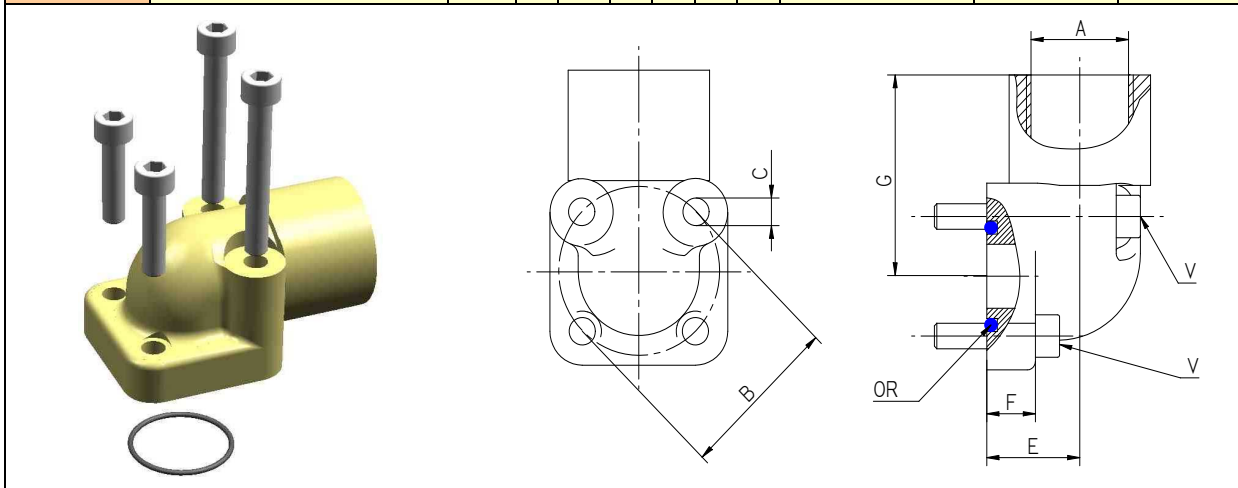

**STRAIGHT STEEL UNIONS**

Code	Type	A	B	C	D	E	F	G	OR	V	Weigth
									O ring	Screw	
8KRD001	RD 26/12-3/8"BSP	3/8"	26	5,5	12	32	10	39	ø14,00x1,78	M5x18	0,11
8KRD002	RD 30/13,5-1/2"BSP	1/2"	30	6,5	13,5	40	10	44	ø15,88x2,62	M6x20	0,14
8KRD005	RD 40/20-3/4"BSP	3/4"	40	8,5	20	42	12	51	ø23,81x2,62	M8x25	0,3
8KRD006	RD 40/23,5-3/4"BSP	3/4"	40	8,5	23,5	42	12	51	ø25,12x1,78	M8x25	0,29
8KRD007	RD 51/27-1"BSP	1"	51	10,5	27	43	12	68	ø31,42x2,62	M10x25	0,46
8KRD008	RD 56/34-1"1/4 BSP	1" 1/4	56	10,5	34	53	12	73	ø37,77x2,62	M10x25	0,68
8KRD009	RD 62/36-1"1/4 BSP	1" 1/4	62	10,5	36	47	13	78	ø41,28x3,53	M10x25	0,9
8KRD010	RD 72,5/45-1"1/2 BSP	1" 1/2	72,5	12,5	45	49	14	89	ø49,20x3,53	M12x30	1,05
8KRD011	RD 92/65-2"1/2 BSP	2" 1/2	92	12,5	65	60	18	114	ø69,85x3,53	M12x40	1,15



**SQUARED STEEL ELBOWS**

Code	Type	A	B	C	D	E	F	G	OR	V	Weight
									O ring	Screw	
8KRQ001	RQ 30/12-3/8"BSP	3/8"	30	6,5	12	19	11	41	ø15,88x2,61	Nº2 M6x20 Nº2 M6x35	0,29
8KRQ002	RQ 30/12-1/2"BSP	1/2"	30	6,5	12	19	11	41	ø15,88x2,62	Nº2 M6x20 Nº2 M6x35	0,29
8KRQ003	RQ 35/15 -3/8"BSP	3/8"	35	6,5	15	18	11	40	ø18,72x2,62	Nº2 M6x20 Nº2 M6x35	0,34
8KRQ004	RQ 35/15 -1/2"BSP	1/2"	35	6,5	15	18	11	40	ø18,72x2,62	Nº2 M6x20 Nº2 M6x35	0,34
8KRQ005	RQ 40/20-1/2"BSP	1/2"	40	6,5	20	24	10	45	ø22,22x2,62	Nº2 M6x25 Nº2 M6x45	0,4
8KRQ006	RQ 40/20-3/4"BSP	3/4"	40	6,5	20	24	10	45	ø22,22x2,62	Nº2 M6x25 Nº2 M6x45	0,4
8KRQ007	RQ 55/25-3/4"BSP	3/4"	55	8,5	25	35	13	54	ø29,75x3,53	Nº2 M8x25 Nº2 M8x60	0,45
8KRQ008	RQ 55/25-1" BSP	1"	55	8,5	25	35	13	54	ø29,75x3,53	Nº2 M8x25 Nº2 M8x60	0,45


**STRAIGHT STEEL UNIONS**

Code	Type	A	B	C	D	E	F	G	OR	V	Weight
									O ring	Screw	
8KRD003	RD 35/15 (BH)-1/2"BSP	1/2"	35	6,5	14	35	10	40	ø18,72x2,62	M6x20	0,15
8KRD004	RD 40/20 (BH)-3/4"BSP	3/4"	40	6,5	17	35	10	40	ø22,22x2,62	M6x20	0,17

